

## 780 CMR 3607

### WALL COVERING

#### 780 CMR 3607.1 - GENERAL

**3607.1.1 Application:** The provisions of 780 CMR 3607.1 shall control the design and construction of the interior and exterior wall covering for all buildings. The use of materials or methods of construction not specified in 780 CMR 3607.1 accomplishing the purposes intended by 780 CMR 36 and approved by the building of in accordance with **780 CMR 109** shall be accepted as complying with 780 CMR 36.

**3607.1.2 Installation:** Products sensitive to adverse weather shall not be installed until adequate weather protection for the installation is provided. Exterior sheathing shall be dry before applying exterior cover.

#### 780 CMR 3607.2 INTERIOR COVERING

**3607.2.1 General:** Interior coverings shall be installed in accordance with this *section* and Tables **3607.2.1a**, **3607.2.1b**, **3607.2.1c** and **3607.2.3.4**. Interior finishes and materials shall conform to the flame spread and smoke-density requirements of **780 CMR 3603**.

**3607.2.2 Interior plaster:** Gypsum plaster or portland cement plastering materials shall conform to ASTM C 5, C 28, C 35, C 37, C 59, C 61, C 587, C 588, C 631, C847, C 897, C 933, C 1032 and C 1047, and shall be installed or applied in conformance with ASTM C 843, C 844 and C 1063, *each as listed in Appendix A*. Plaster shall not be less than three coats when applied over metal lath and not less than two coats when applied over other bases permitted by 780 CMR 3607.2, except that veneer plaster may be applied in one coat not to exceed  $\frac{3}{16}$  inch (4.76 mm) thickness, provided the total thickness is as set forth in Table **3607.2.1a**.

**3607.2.2.1 Support:** Support spacing, *spacing of fasteners and size of fasteners* for gypsum and metal lath shall conform with Table **3607.2.3.4**. Gypsum lath shall be installed at right angles to support framing with end joints staggered.

#### 3607.2.3 Gypsum wallboard:

**3607.2.3.1 Materials:** All gypsum wallboard materials and accessories shall conform to ASTM C 36, C 475, C 514, C 960, C 1002 and C 1047 *as listed in Appendix A*, and shall be installed in accordance with the provisions of 780 CMR

3607.2. Adhesives for the installation of gypsum wallboard shall conform to ASTM C 557 *as listed in Appendix A*.

**3607.2.3.2 Wood framing:** Wood framing supporting gypsum wallboard shall not be less than two inches (51 mm) nominal thickness in the least dimension except that wood furring strips not less than one-inch-by-two inch (25 mm by 51 mm) nominal dimension may be used over solid backing or framing spaced not more than 24 inches (610 mm) on center.

**3607.2.3.3 Steel framing:** Steel framing shall not be less than 1¼ inches (32 mm) wide in the least dimension. Light-gage nonload-bearing steel framing shall comply with ASTM C 645 *as listed in Appendix A*. Load-bearing steel framing and steel framing from 0.033 inch to 0.112 inch (0.838 mm to 2.84 mm) thick shall comply with ASTM C 955 *as listed in Appendix A*.

**3607.2.3.4 Application:** Support spacing and size and spacing of fasteners shall comply with Table **3607.2.3.4**. Gypsum wallboard may be applied at right angles or parallel to framing members. All edges and ends of gypsum wallboard shall occur on the framing members, except those edges and ends which are perpendicular to the framing members. Interior gypsum wallboard shall not be installed where it is exposed to the weather construction.

**3607.2.3.5 Fastening:** Screws for attaching gypsum wallboard to wood shall be Type W in accordance with ASTM C 1002 *as listed in Appendix A* and shall penetrate the wood not less than  $\frac{1}{8}$  inch (15.9 mm). Screws for attaching gypsum wallboard to light-gage steel shall be Type S in accordance with ASTM C 1002 *as listed in Appendix A* and shall penetrate the steel not less than ¼ inch (6.4 mm). Screws for attaching gypsum wallboard to steel 0.033 inch to 0.112 inch (0.838 mm to 2.84 mm) thick shall comply with ASTM C 954 *as listed in Appendix A*.

**3607.2.4 Bathtub and shower spaces:** Bathtub and shower floors and walls shall be finished with a smooth, hard and nonabsorbent surface. Ceramic tile surfaces shall be installed in accordance with ANSI A 108.1, A108.4, A108.5, A108.6, A108.11, A118.1, A 118.3, A 136.1 and A 137.1 *as listed in Appendix A*. Such wall surfaces shall extend to a

THE MASSACHUSETTS STATE BUILDING CODE

height of not less than six feet (1829 mm) above the floor.

**3607.2.4.1 Ceramic tile:** Gypsum board utilized as the base or backer board for adhesive application of ceramic tile or other nonabsorbent finish material shall conform with ASTM C 630 *as listed in Appendix A*. Water-resistant gypsum backing board shall be permitted to be used on ceilings where framing spacing does not exceed 12 inches (305 mm) on center. All cut or exposed edges, including those at wall intersections, shall be sealed as recommended by the manufacturer.

**3607.2.5 Other finishes:** Wood veneer or hardboard paneling not less than 1/4-inch (6.4 mm) nominal thickness [<sup>13</sup>/<sub>64</sub>-inch (5.2 mm) actual] shall conform to HPMA (ANSI) HP for wood veneer and AHA (ANSI) A135.5 for hardboard paneling. These finishes may be installed directly to studs with a maximum 16 inches on center spacing: wood veneer or hardboard paneling less than 1/4 inch nominal thickness must not have less than \_ inch gypsum board backer, unless the qualifying tests were made with the material suspended from noncombustible backing, and stud spacing may not exceed 16 inches on center.

**3607.2.6 Wood shakes and shingles:** Wood shakes and shingles shall conform to CSSB “Grading Rules for Wood Shakes and Shingles” *as listed in Appendix A*.

TABLE 3607.2.1a  
THICKNESS OF PLASTER

PLASTER BASE	FINISHED THICKNESS OF PLASTER FROM FACE TO LATH, MASONRY, CONCRETE	
	Gypsum Plaster	Portland Cement Mortar
Expanded metal lath	_ " minimum <sup>1</sup>	_ " minimum <sup>1</sup>
Wire lath	_ " minimum <sup>1</sup>	3/4" minimum (interior) <sup>2</sup> _ " minimum (exterior) <sup>2</sup>
Gypsum lath	1/2" minimum	
Masonry walls <sup>3</sup>	1/2" minimum	1/2" minimum
Monolithic concrete walls <sup>3,4</sup>	_ " maximum	_ " maximum
Monolithic concrete ceilings <sup>3,4</sup>	_ " maximum <sup>5</sup>	1/2" maximum
Gypsum veneer base <sup>6</sup>	1/16" minimum <sup>1</sup>	

TABLE 3607.2.1c  
PORTLAND CEMENT PLASTER

MAXIMUM VOLUME AGGREGATE PER VOLUME CEMENTITIOUS MATERIAL <sup>1</sup>					MINIMUM PERIOD MOIST COATS	MINIMUM INTERVAL BETWEEN
COAT	Portland Cement	Portland Cement-lime Plaster <sup>3</sup>		Approximate		
		Maximum Volume	Maximum Volume			

- For SI: 1 inch = 25.4 mm
1. When measured from back plane of expanded metal lath, exclusive of ribs, or self -furring lath, plaster thickness shall be 3/4 inch minimum.
  2. When measured from face of support or backing.
  3. Because masonry and concrete surfaces may vary in plane, thickness of plaster need not be uniform.
  4. When applied over a liquid bonding agent, finish coat may be applied directly to concrete surface.
  5. Approved acoustical plaster may be applied directly to concrete or over base coat plaster, beyond the maximum plaster thickness shown.
  6. Attachment shall be in accordance with Table 3607.2.3.4.

TABLE 3607.2.1b  
GYPSUM PLASTER PROPORTIONS

NUMBER	COAT	PLASTER BASE OR LATH	MAXIMUM VOLUME AGGREGATE PER 100 POUNDS NEAT PLASTER <sup>2</sup> (cubic feet)	
			Damp Loose Sand <sup>1</sup>	Perlite or Vermiculite <sup>3</sup>
Two-coat work	Base coat	Gypsum lath	2 1/2	2
	Base coat	Masonry	3	3
Three-coat work	First coat	Lath	2 <sup>4</sup>	2
	Second coat	Lath	3 <sup>4</sup>	2 <sup>5</sup>
	First and second coats	Masonry	3	3

- For SI: 1 inch = 25.4 mm, 1 cubic foot = 0.0283 m<sup>3</sup>, 1 pound = 0.454 kg.
1. Wood-fibered gypsum plaster may be mixed in the proportions of 100 pounds of gypsum to not more than one cubic foot of sand where applied on masonry or concrete.
  2. When determining the amount of aggregate in set plaster, a tolerance of 10% shall be allowed.
  3. Combinations of sand and lightweight aggregate may be used, provided the volume and weight relationship of the combined aggregate to gypsum plaster is maintained.
  4. If used for both first and second coats, the volume of aggregate may be 2 1/2 cubic feet.
  5. Where plaster is one inch or more in total thickness, the proportions for the second coat may be increased to three cubic feet.

ONE AND TWO FAMILY DWELLINGS - WALL COVERING

	Plaster <sup>2</sup> Maximum Volume Aggregate per Volume Cement	Lime per Volume Cement	Sand per Volume Cement and Lime	Minimum Thickness <sup>4</sup> Curing		
First	4	¾	4	5 —	48 <sup>6</sup> Hours	48 <sup>7</sup> Hours
Second	5	¾	5	First and Second coats	48 Hours	7 Days <sup>8</sup>
Finished	3 <sup>9</sup>	-	3 <sup>9</sup>	—	-	8 -

For SI: 1 inch = 25.4 mm, 1 pound = 0.454 kg.

1. When determining the amount of aggregate in set plaster, a tolerance of 10% may be allowed.
2. From ten to 20 pounds of dry hydrated lime (or an equivalent amount of lime putty) may be added as a plasticizing agent to each sack of Type I and Type II standard portland cement in base coat plaster.
3. No additions of plasticizing agents shall be made.
4. See Table 3607.2.1a
5. Measured from face of support or backing to crest of scored plaster.
6. 24 hour minimum period for moist curing of interior portland cement plaster.
7. 24 hour minimum interval between coats of interior portland cement plaster.
8. Finish coat plaster may be applied to interior portland cement base coat after a 48-hour period.
9. For finish coat, plaster up to an equal part of dry hydrated lime by weight (or an equivalent volume of lime putty) may be added to Type I, Type II and Type III standard portland cement.

TABLE 3607.2.3.4  
APPLICATION AND MINIMUM THICKNESS OF GYPSUM WALLBOARD

THICKNESS OF GYPSUM WALLBOARD (inch)	PLANE OF FRAMING SURFACE <sup>4</sup>	LONG DIMENSION OF GYPSUM WALLBOARD SHEETS IN RELATION TO DIRECTION OF FRAMING MEMBERS	MAXIMUM SPACING OF FRAMING MEMBERS (center-to- center in inches)	MAXIMUM SPACING OF FASTENERS (center-to-center, in inches)		NAILS <sup>1</sup> TO WOOD
				Nails <sup>1,2</sup>	Screws	
Fastening required without adhesive application.						
—	Horizontal <sup>4</sup>	Perpendicular	16	7	12	No. 13 gage 1¼" long, <sup>19</sup> / <sub>64</sub> " head; 0.098" diameter, 1¼" long, annular-ringed; 4d cooler nail
	Vertical	Either direction	16	8	12	
½	Horizontal <sup>3</sup>	Either direction	16	7	12	No. 13 gage 1 _" long, <sup>19</sup> / <sub>64</sub> " head; 0.098" diameter, 1¼" long, annular-ringed; 5d cooler nail
	Horizontal <sup>3</sup>	Perpendicular	24	7	12	
	Vertical	Either direction	24	8	12	
—	Horizontal	Either direction	16	7	12	No. 13 gage 1 _" long, <sup>19</sup> / <sub>64</sub> " head; 0.098" diameter, 1 _" long, annular-ringed; 6d cooler nail
	Horizontal	Perpendicular	24	7	12	
	Vertical	Either direction	24	8	12	
With adhesive application.						
—	Horizontal <sup>4</sup>	Perpendicular	16	16	16	Same as above for _"
	Vertical	Either direction	16	16	24	
½ or _	Horizontal	Either direction <sup>3</sup>	16	16	16	As required for ½" and _" gypsum wallboard, see above
		Perpendicular	24	12	16	
	Vertical	Either direction	24	24	24	
2 _ layers	Horizontal	Perpendicular	24	16	16	Base ply nailed as required for ½" gypsum wallboard and face ply placed with adhesive
	Vertical	Either direction	24	24	24	

For SI: 1 inch = 25.4 mm

1. Where the metal framing has a clinching design formed to receive the nails by two edges of metal, the nails shall not be less than \_ inch longer than the wallboard thickness and shall have ringed shanks. Where the metal framing has a nailing groove formed to receive the nails, the nails shall have barbed shanks or be 5d, 13½ gage, 1 \_ inches long, <sup>15</sup>/<sub>64</sub>-inch head for ½-inch gypsum wallboard; 6d, 13 gage, 1 \_ inches long, <sup>15</sup>/<sub>64</sub> -inch head for \_-inch gypsum wallboard.
2. Two nails spaced not less than two inches apart, or more than 2½ inches apart may be used where the pairs are spaced 12 inches on center except around the perimeter of the boards.
3. \_-inch single-ply gypsum board shall not be installed if water-based textured finish is applied or to

## THE MASSACHUSETTS STATE BUILDING CODE

support insulation above a ceiling. On horizontal applications to receive a water-based texture material, either hand or spray applied, gypsum board shall be applied perpendicular to framing and board thickness increased from    inch to ½ inch for 16-inch o.c. framing, and from ½ inch to    inch for 24-inch o.c. framing.

4. Horizontal refers to applications such as ceilings. Vertical refers to applications such as walls.

**3607.2.6.1 Attachment:** Nails, staples or glue are permitted for use in attaching shakes or shingles to the wall, and the shakes or shingles shall be permitted to be attached directly to the surface provided the fasteners are appropriate for the type

**3607.2.6.2 Furring strips:** Where furring strips are used, they shall be one inch by two inches or one inch by three inches (25 mm by 51 mm or 25 mm by 76 mm), spaced a distance on center equal to the shake or shingle exposure, and shall be attached to the wall by nailing through other wall material into the studs of the interior spaces.

**3607.2.6.3 Bottom course:** The bottom course shall be doubled.

## 780 CMR 3607.3 EXTERIOR COVERING

**3607.3.1 General:** All exterior walls shall be covered with approved materials designed and installed to provide a barrier against the weather and insects to enable environmental control of the interior spaces. The exterior coverings in 780 CMR 3607.0 shall be installed in the specified manner unless otherwise approved.

**3607.3.2 Weather-resistant sheathing paper:** Asphalt-saturated felt, free from holes and breaks and weighing not less than 14 pounds per 100 square feet (0.683 kg/m<sup>2</sup>) or other approved weather-resistant material shall be applied over studs or sheathing of all exterior walls as required by Table **3607.3.4**. Such felt or material shall be applied horizontally, with the upper layer lapped over the lower layer not less than two inches (51 mm). Where joints occur, felt shall be lapped not less than six inches (153 mm).

**3607.3.2.1 Felt or material:** Such felt or material may be omitted.

1. In detached accessory buildings.
2. Under panel siding with shiplap joints or battens.
3. Under exterior wall finish materials as permitted in Table **3607.3.4**.
4. Under paperbacked stucco lath.
5. Over water-repellent sheathing materials.

**3607.3.3 Wood, plywood and wood structural panel siding:** Joints in wood, plywood or wood structural panel siding shall be made as follows unless otherwise approved. Vertical joints in panel siding shall occur over framing members, unless wood or wood structural panel sheathing is used, and shall be shiplapped or covered with a batten.

of wall surface material. When nails or staples are used, two fasteners shall be provided and shall be placed so that they are covered by the course above.

Horizontal joints in panel siding shall be lapped a minimum of one inch (25 mm) or shall be flashed with Z-flashing.

**3607.3.3.1 Horizontal siding:** Horizontal siding shall be lapped a minimum of one inch (25 mm), or ½ inch (12.7 mm) if rabbeted, and shall have the ends caulked, covered with a batten, or sealed and installed over a strip of flashing.

**3607.3.4 Attachments:** Unless specified otherwise, all wall coverings shall be securely fastened in accordance with Table **3607.3.4** or with other approved aluminum, stainless steel, zinc-coated, or other approved corrosion-resistive fasteners.

**3607.3.5 Wood shakes and shingles:** Wood shakes and shingles shall conform to CSSB “Grading Rules for Wood Shakes and Shingles.”

**3607.3.5.1 Application:** Wood shakes or shingles shall be applied either single-course or double-course over nominal ½-inch (12.7 mm) wood-based sheathing or to furring strips over ½-inch (12.7 mm) nominal non-wood sheathing. A weather-resistant permeable membrane shall be provided over the sheathing, with horizontal overlaps in the membrane of not less than two inches (51 mm) and vertical overlaps of not less than six inches (153 mm). Where furring strips are used, they shall be one inch by three inches or one inch by four inches (25 mm by 76 mm or 25 mm by 102 mm) and shall be fastened horizontally to the studs with 7d or 8d box nails and shall be spaced a distance on center equal to the actual weather exposure of the shakes or shingles, not to exceed the maximum exposure specified in Table **3607.3.5.2**. The spacing between adjacent shingles to allow for expansion shall not exceed ¼ inch (6.4 mm), and between adjacent shakes, shall not exceed ½ inch (12.7 mm). The offset spacing between joints in adjacent courses a minimum of 1½ inches (38 mm).

**3607.3.5.2 Weather exposure:** The maximum weather exposure for shakes and shingles shall not exceed that specified in Table **3607.3.5.2**.

**3607.3.5.3 Attachment:** Each shake or shingle

## ONE AND TWO FAMILY DWELLINGS - WALL COVERING

shall be held in place by two hot-dipped zinc-coated, stainless steel, or aluminum nails or staples. The fasteners shall be long enough to penetrate the sheathing or furring strips by a minimum of  $\frac{1}{2}$  inch (12.7 mm) and shall not be overdriven.

**3607.3.5.3.1 Staple attachment:** Staples shall not be less than 16 gage and shall have a crown width of not less than  $\frac{7}{16}$  inch (11 mm), and the crown of the staples shall be parallel with the butt of the shake or shingle. In single-course application, the fasteners shall be concealed by the course above and shall be

**3607.3.6 Exterior lath:** All lath and lath attachments shall be of corrosion-resistant materials. Expanded metal or woven wire lath shall be attached with  $1\frac{1}{2}$  inch (38 mm) long, 11 gage nails having a  $\frac{7}{16}$ -inch (11 mm) head, or  $\frac{1}{4}$  inch (22 mm) long, 16 gage staples, spaced at no more than six inches (153 mm), or as otherwise approved.

**3607.3.7 Masonry veneer, general:** All masonry veneer shall be installed in accordance with 780 CMR 3607.3.7, Table **3607.3.4** and Figure **3607.3.7**. Exterior masonry veneer shall not be laterally supported by wood frame at any point more than 35 feet (7620 mm) above the adjacent ground elevation.

**Exceptions:**

1. Veneers used as interior wall finishes may be supported on wood floors which are designed to support the loads imposed.
2. Exterior masonry veneers *with* an installed weight of 40 pounds per square foot ( $195 \text{ kg/m}^2$ ) or less may be supported on wood construction. When the masonry veneer is supported by wood construction that adjoins the masonry veneer supported by the foundation, there shall be a movement joint between the veneer supported by the wood construction and the foundation. The wood construction supporting the masonry veneer shall be designed to limit deflection to  $\frac{1}{600}$  of the span for the supporting members.

driven approximately one inch (25 mm) above the butt line of the succeeding course and  $\frac{3}{4}$  inch (19 mm) from the edge. In double-course applications, the exposed shake or shingle shall be face-nailed with two casing nails, driven approximately two inches (51 mm) above the butt line and  $\frac{3}{4}$  inch (19 mm) from each edge. Staples shall not be permitted for face-nailing. With shingles wider than eight inches (203 mm), two additional nails shall be required and shall be nailed approximately one inch (25 mm) apart near the center of the shingle.

**3607.3.7.1 Lintels:** Masonry veneer shall not support any vertical load other than the dead load of the veneer above. Veneer above openings shall be supported on lintels of noncombustible materials and the allowable span shall not exceed the values set forth in Table **3607.3.7.1**. The lintels shall have a length of bearing of not less than four inches (102 mm).

**3607.3.7.2 Attachment:** Masonry veneer shall be attached to the supporting wall with corrosion-resistant metal ties.

**3607.3.7.2.1 Size and spacing:** Veneer ties, if strand wire, shall not be less in thickness than No. 9 U.S. gage wire and shall have a hood embedded in the mortar joint, or if sheet metal, not less than No. 22 U.S. gage by  $\frac{1}{4}$  inch (22 mm) corrugated. Each tie shall be spaced not more than 24 inches (610 mm) on center horizontally and shall support not more than  $3\frac{1}{4}$  square feet ( $0.302 \text{ m}^2$ ) of wall area.

**Exception:** In wind areas of more than 30 pounds per square foot ( $1.44 \text{ kN/m}^2$ ), each tie shall support not more than two square feet ( $0.186 \text{ m}^2$ ) of wall area.

TABLE 3607.3.4  
WEATHER-RESISTANT SIDING ATTACHMENT AND MINIMUM THICKNESS

SIDING MATERIAL		NOMINAL THICKNESS 1 (inches)	JOINT TREATMENT	SHEATHING PAPER REQUIRED	TYPE OF SUPPORTS FOR THE SIDING MATERIAL AND FASTENERS <sup>2,3,4</sup>					
					Wood, or Wood structural Panel Sheathing	Fiberboard Sheathing into Stud	Gypsum Sheathing into Stud	Direct to Studs	Number or Spacing of Fasteners	
Horizontal aluminum <sup>5</sup>	Without insulation	0.019 <sup>6</sup>	Lap	No	0.120 nail 1½" long	0.120 nail 2" long	0.120 nail 2" long	Not allowed	Same as stud spacing	
		0.024	Lap	No	0.120 nail 1½" long	0.120 nail 2" long	0.120 nail 2" long	Not allowed		
	With insulation	0.019	Lap	No	0.120 nail 1½" long	0.120 nail 2½" long	0.120 nail 2½" long	0.120 nail 1½" long		
Brick veneer Concrete masonry veneer		2 2	780 CMR 3607.3	Yes (13)	See 780 CMR 3607.3 and Figure 3607.3.7 <sup>8</sup>					
Hardboard <sup>12</sup> Board and batten-vertical		7/16	(7)	(7)	0.099 nail 2" long	0.099 nail 2½" long	0.099 nail 2" long	0.099 nail 1¾" long		6" panel edges 8" inter. sup.
Hardboard <sup>12</sup> Lap-siding-horizontal		7/16	(7)	(7)	0.099 nail 2" long	0.099 nail 2½" long	0.099 nail 2¼" long	0.099 nail 2" long	Same as stud spacing 2 per bearing	
Steel <sup>9</sup>		29 ga.	Lap	No	0.113 nail 1¾" Staple 1¾"	0.113 nail 2¾" Staple 2½"	0.113 nail 2½" Staple 2¼"	Not allowed	Same as stud spacing	
Stone veneer		2	780 CMR 3607.3	Yes	See 780 CMR 3607.3 and Figure 3607.3.7					
Particalboard panels		— - ½	(7)	(7)	6d box nail	6d box nail	6d box nail	6d box nail, not allowed	6" panel edges 12" inter. sup.	
		—	(7)	(7)	6d box nail	8d box nail	8d box nail	6d box nail		
Plywood panel <sup>10</sup> (exterior grade)		—	(7)	(7)	0.099 nail 2" Staple 1—	0.113 nail 2½" Staple 2¼"	0.099 nail 2" Staple 2"	0.099 nail 2" Staple 1—	6" on edges 12" inter. sup.	
Vinyl Siding <sup>14</sup>		0.035	Lap	No	0.120 nail 1½" Staple 1¾"	0.120 nail 2" Staple 2½"	0.120 nail 2" Staple 2½"	Not allowed	Same as stud spacing	
Wood <sup>11</sup> Rustic drop Shiplap  Bevel Butt tip		— Minimum <sup>19/32</sup> Average	Lap	No	Fastener penetration into stud - 1"			0.113 nail 2½" Staple 2"	Face nailig up to 6" widths, 1 nail per bearing; 8" widrhrs and over, 2 nails per bearing	
		7/16	Lap	No						
		3/16	Lap	No						

For SI: 1 inch = 25.4 mm.

1. Based on stud spacing of 16 inches o.c. Where studs are spaces 24 inches, siding may be applied to sheathing approved for that spacing.

2. Nail is a general description and may be T-head, modified round head, or round head with smooth or deformed shanks.

3. Staples shall have a minimum crown width of 7/16-inch O.D. and be manufactured of minimum No. 16 gage wire.

4. Nails or staples must be aluminum, galvanized, or rust-preventive coated and shall be driven into the studs for fiberboard or gypsum backing.

5. Aluminum nails shall be used to attach aluminum siding.

6 Aluminum (0.019 inch) may be unbacked only when the maximum panel width is ten inches and the maximum flat area is eight inches. The tolerance for aluminum siding shall be ±0.002 inch of the nominal dimension.

7. If boards are applied over sheathing or weather resistant membrane, joints need not be treated. Otherwise, vertical joints must occur at studs and be covered with battens or be lapped.

8. All attachments shall be coated with a corrosion-resistive coating.

9. Shall be of approved type.

10. —-inch plywood may be applied directly to studs spaced 16 inches on center. ½-inch plywood may be applied directly to studs spaced at 24 inches on center.

ONE AND TWO FAMILY DWELLINGS - WALL COVERING

11. Woodboard sidings applied vertically shall be nailed to horizontal nailing strips or blocking set 24 inches o.c. Nails shall penetrate 1½ inches into studs, studs and wood sheathing combined, or blocking. A weather-resistant membrane shall be installed weatherboard fashion under the vertical siding unless the siding boards are lapped or battens are used.
12. Hardboard siding shall comply with AHA A135.6
13. For masonry veneer, a weather-resistant membrane or building paper is not required over water-repellent sheathing materials when a one-inch air space is provided between the veneer and the sheathing. When the one-inch space is filled with mortar, a weather-resistant membrane or building paper is required over studs or sheathing.
14. Vinyl siding shall comply with ASTM D 3679.

TABLE 3607.3.5.2  
MAXIMUM WEATHER EXPOSURE FOR  
WOOD SHAKES AND SHINGLES ON  
EXTERIOR WALLS  
(Dimensions are in

LENGTH	EXPOSURE FOR SINGLE COURSE	EXPOSURE FOR DOUBLE COURSE
SHINGLES <sup>1</sup>		
16	7½	12 <sup>2</sup>
18	8½	14 <sup>3</sup>
24	11½	16
SHAKES <sup>1</sup>		
18	8½	14
24	11½	18

- For SI: 1 inch = 25.4 mm
1. Dimensions given are for No. 1 Grade.
2. A maximum ten-inch exposure is permitted for No. 2 Grade.
3. A maximum 11-inch exposure is permitted for No. 2 Grade.

**3607.3.7.2.2 Paper backing required:** When applied over stud construction, the studs shall be spaced a maximum of 24 inches (610 mm) on center and approved paper shall first be applied over the sheathing or wires between the studs, except as otherwise provided in **780 CMR 3607.3.2** and mortar shall be slushed into the one-inch (25 mm) space between facing and paper.

**Exception:** As an alternate, an air space of at least one inch (25 mm) may be maintained between the backing and the veneer, in which case a weather-resistant membrane or felt sheathing paper or approved water-repellent sheathing shall be applied over the studs.

**3607.3.7.2.3 Veneer grouting:** In lieu of such wire ties, an approved method of grouting the veneer to a paperbacked reinforcement

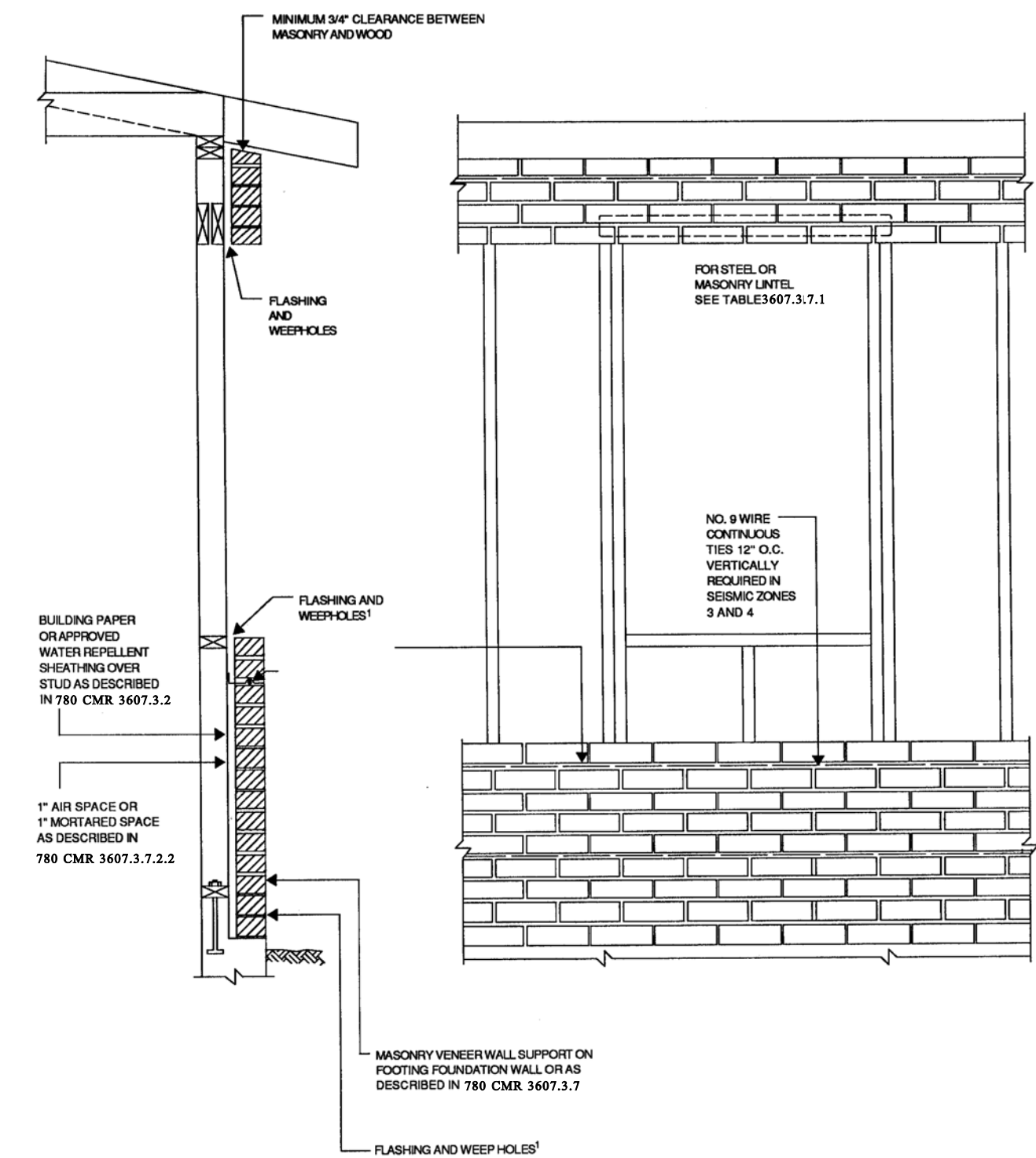
attached directly to the studs may be used.

**3607.3.7.3 Flashing:** Flashing shall be located beneath the first course of masonry above finished ground level above the foundation wall or slab, and at other points of support, including structural floors, shelf angles and lintels when masonry veneers are designed in accordance with **780 CMR 3607.3.7**. See **780 CMR 3607.3.8** for additional requirements.

**3607.3.7.4 Weepholes:** Weepholes shall be provided in the outside of masonry walls at a maximum spacing of 33 inches (838 mm) on center. Weepholes shall not be less than 3/16 inch (4.8 mm) in diameter. Weepholes shall be located immediately above the flashing.

**3607.3.8 Flashing:** Approved corrosion-resistive flashing shall be provided at top and sides of all exterior window and door openings in such a manner as to be leak-proof, except that self-flashing windows having a continuous lap of not less than 1 inches (28 mm) over the sheathing material around the perimeter of the opening, including corners, do not require additional flashing; jamb flashing may also be omitted when specifically approved by the building official. Similar flashings shall be installed at the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings; under and at the ends of masonry, wood or metal copings and sills; continuously above all projecting wood trim; where exterior porches, decks or stairs attach to a wall or floor assembly of wood-frame construction; at wall and roof intersections.

FIGURE 3607.3.7  
MASONRY VENEERED WALL DETAIL



For SI: 1 inch = 25.4 mm.  
1. Location of flashing and weepholes as described in 780 CMR 3607.3.7.3 and 3607.3.7.4.

TABLE 3607.3.7.1  
ALLOWABLE SPANS FOR LINTELS SUPPORTING MASONRY VENEER

SIZE OF STEEL ANGLE <sup>1,3</sup>	NO STORY ABOVE	ONE STORY ABOVE	TWO STORIES ABOVE	NO OF 1/2" OR EQUIVALENT REINFORCING BARS <sup>2</sup>
3 x 3 x 1/4	6'-0"	3'-6"	3'-0"	1
4 x 3 x 1/4	8' - 0"	5'-0"	3'-0"	1
6 x 3 1/2 x 1/4	14' - 0"	8'-0"	3'-6"	2
2-6 x 3 1/2 x 1/4	20' - 0"	11'-0"	5'-0"	4

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.  
1. Long leg of the angle shall be placed in a vertical position.  
2. Depth of reinforced lintels shall not be less than eight inches and all cells of hollow masonry lintels shall be grouted and solid. Reinforcing bars shall extend not less than eight inches into the support.



3. Steel members indicated are adequate typical examples; other steel members meeting structural design requirements may be used.